CONTRIBUTIONS TO PSYCHIATRY.

By JAS. G. KIERNAN, M.D.,
CHICAGO, ILL.

IV.—THE PSYCHOSES PRODUCED BY RHEUMATISM.

RHEUMATISM since the days of Sydenham has been recognized as capable of producing psychic disturbances. The first, however, to call special attention to the relations of rheumatism to the psychoses was Griesinger,[1] who found that rheumatism produced not only an acute but also a chronic form of insanity; that this was unattended by fever and characterized by depression amounting sometimes almost to melancholia attonita, followed by or alternated with maniacal excitement, and that at times choreic movements were present, prognosis being most favorable in the acute cases. Fleming[2] has expressed very similar opinions. Skae[3] claims to have noticed in 1845 a case of insanity, due to rheumatism, which presented the following phenomena: The patient was at first delirious, then passed into a condition of melancholia attonita, then became violent, and after calming down expressed ungrounded suspicions. In other cases chorea was present, as also hallucinations of taste and touch. Skae regards the psychoses from rheumatism as being about as well defined as progressive paresis, and as having a favorable prognosis. Mesnet[4] was the first to use the term rheumatismal insanity,

giving under that head cases very similar to those of Griesinger. Delioux,[5] from one case much resembling Skae's, draws conclusions very similar to those of that author. Trousseau[6] divides the cerebral complications of rheumatism into delirious, meningitic, hydrocephalic and apoplectic, claiming that hereditary predisposition is *always* present. Simon[7] draws about the same conclusion regarding the rheumatismal psychoses as Griesinger. Sander[8] cites Griesinger's conclusions as expressing his own views, and gives, in addition, several cases where rheumatism has led to apparent recovery from insanity. Wille[9] comes to substantially the same conclusions as Sander, citing, in addition, a case where disappearance of the rheumatic fever was followed by a change in the psychical symptoms. Besser[10] expresses about the same opinions, as also does Girard.[11] Kræpiliner,[12] who has made a very careful examination of sixty-three cases of insanity due to rheumatism, claims that at certain seasons cerebral complications of rheumatism are more frequent, so that cases may accumulate in a short period, although unknown for a long time before (they are said by Rigler to be more frequent in Turkey), and that rheumatismal insanity is divisible into the following classes: First, the hyperpyretic form, the most acute variety, the initial symptoms of which are insomnia, talking in sleep, slight delirium, followed by severe delirium later; after a rise in the temperature death results; with continued rise in the temperature the prognosis is bad, only eighteen per cent. recovering; the disease is sometimes complicated by facial spasm. Second, less acute delirious cases occurring during the first week of the disease, rarely during the second week; usually comes on with maniacal excitement at times, though rarely with melancholic frenzy; collapse or death occurs in over one-half the cases. Choreic complications

occurred in a few cases. Three cases recovered after spontaneous epistaxis. Third, a form which requires for its production, in addition to the exciting cause—rheumatism,—certain predisposing causes—anæmia, alcohol or heredity. This form is divisible into two great symptomatological groups. I. Active melancholia, with fright and suicidal tendencies, sometimes accompanied with choreic movements and vertigo. The prognosis is not very favorable. II. The other symptomatological group lasts three or four months, presenting symptoms of confusion with depression, sometimes chorea and sitophobia, *always* with hallucinations. Four cases recovered; one died. Vaillard,[13] Guislain,[14] Clouston,[15] Pauli,[16] Posner,[17] Meissner[18] and Kelp[19] describe cases of melancholia attonita due to rheumatism. Voisin[20] and Jaccoud[21] cite cases of progressive paresis due to rheumatism.

From the predominance of opinion among the authorities cited, it would appear that rheumatism does give rise to psychoses; that these are usually of a depressing type, but that, according to some, progressive paresis is produced by the disease.

The cases coming under my observation are eighteen in number, and for purposes of comparison I have divided them into three classes: First, those of an acute type ending in either recovery, death or slight dementia. Secondly, those which culminated in progressive paresis. Finally, those in which rheumatism complicated other psychoses.

CLASS FIRST.—*Cases of an acute character ending in either recovery, slight dementia, or death.*

CASE I.—T. O'M., æt. 40. Father and sister died insane; was under treatment at Bellevue Hospital for acute articular rheumatism with high fever. The joint affection together with the fever disappeared soon after a large dose of sodium salicy-

late, the patient being in a short time attacked by delirium. He wished to escape from dogs, which he said were pursuing him, called for a gun to shoot them, and was very restless. In the course of a week he was transferred to the asylum, where he remained in about the same condition for three days. His temperature on admission was 98°, but it soon after rose to 102°. The deliriums, previously of a depressing type, became rather optimistic, varied by crude suspicions about the intentions of the bystanders. The patient was placed under ℞ kali iod., kali bromid., chloral hydrat., vin. colchici, aa 8. Aqua qs. ad 96. M. 3 ss omne tertia hora. This treatment was not without effect on the delirium, as the patient became quieter, although not more lucid. He never fully regained his normal mental condition, dying five weeks after admission. No autopsy.

CASE 2.—Jno. G., æt. 50, admitted from the Tombs in a state of violent delirium, much resembling that of alcohol. The patient, who has a brother insane, had been perfectly well up to a week prior to admission at the Tombs, when he was attacked by rheumatism involving the knees, ankles and wrist, accompanied by a high fever. The third day after the appearance of the fever, the patient was exceedingly delirious ; home treatment was for a time pursued, but his violent attempts rendered transfer to an asylum necessary. On admission the patient had a temperature of 101° F. His knees, ankles and wrists were swollen. Psychically he was much agitated and presented hallucinations of taste, hearing and sight. The day after admission his temperature rose to 105° F. ; his agitation increased, he being with difficulty in bed, desiring *to get up continually* and drive off a legion of devils pursuing him ; he refused to take egg nogg on the ground that it *tasted* and *looked* like blood. He was placed under the same treatment as the previous case. Within three days after this the patient became comparatively rational, and by the end of the second week the delirium had entirely disappeared. The patient soon began to improve physically, and was finally discharged. Recovered four weeks after.

CASE 3.—Jno. F. McK., æt. 40, intemperate, a pauper workhouse man employed about the asylum, was attacked by acute articular rheumatism, which, however, presented nothing abnormal for about two days, when his temperature rose suddenly to 106° F., falling on the same day to 99°, but followed by endocarditis, after the pronounced symptoms of which, the patient complained of being poisoned, and said that workhouse women entered his

room to stick pins in him. The patient was at length committed to the asylum and placed under a similar treatment to the other cases just mentioned. He recovered, but exhibited some little loss of memory.

These cases correspond in some respects to Kræpiliner's acute hyperpyretic form, but resemble most his second variety. What rôle the salicylate of soda played in the first case it is very difficult to ascertain; according to certain cases recently reported,[22] the remedy has seemed to play a part in the production of rheumatic delirium. In their length and the presence of hallucinations, these cases somewhat approximate Kræpiliner's third group, as they also do in the presence of heredity and alcohol as predisposing causes. The cases are too few to draw any conclusion as to the influence of age. One observation of Kræpiliner's,[23] that diseases of the heart produced peculiar effects on the delusions, is apparently corroborated by the third case, where the existence of cardiac lesion was accompanied with delusions of poisoning. These cases, however, taken as a whole, cannot be said to completely corroborate either Griesinger, Sander, Fleming, Skae or Kræpiliner, although more nearly agreeing with the last mentioned.

CLASS SECOND.—*Cases culminating in progressive paresis.*

CASE I.—J. McB., æt. 40, Celtic, admitted to N. Y. C. Asylum for the Insane, 1873, then in a typical condition of melancholia attonita. About a week previous the patient had been under treatment for acute articular rheumatism. The present mental condition made its appearance soon after the disappearance of the fever by which the joint affection was accompanied. For three days after admission the patient remained the same. On the fourth day he became excited, charged the attendant with cutting his arm off, and complained that his food was poisoned. This condition was accompanied by insomnia and persisted for three days, the patient sinking once more into a condition of melancholia attonita. In the course of a week following, choreic movements were manifest on the right side, which persisted for ten days, the patient's

mental condition remaining the same. The week following, these movements disappeared, and the patient became markedly excited, was very suspicious about his food, and claimed, as before, that his arm was cut off and that he was watched by attendants having evil designs on his person. This mental condition continued three weeks, and was then replaced by one of an acutely maniacal nature in which ideas of suspicion formed a prominent part of the patient's mental life. The patient gradually quieted down, sinking as before into a condition of melancholia attonita. In this state the patient remained for six months, when he suddenly brightened up and became nearly rational, his manner only being at all peculiar; he was discharged to the care of friends after eight months of treatment. In 1875 he was again admitted, and it was then ascertained that he had a brother insane and that a granduncle died insane. The patient now displayed marked insanity of manner, had well-marked systematized[24] delusions of persecution on the part of his relatives and his partners. He had erect straight hair and showed slight tendency to incoherence. The patient took food very suspiciously. There were not any hallucinations to be detected. He remained in the asylum, without change in his condition, for a month, when he was discharged to his friends to be taken to Europe. In 1877 the patient was again admitted and presented all the mental and physical symptoms of progressive paresis tinged by slight traces of his former condition. He had marked hyperæsthesia of the lower extremities, but these were at times anæsthetic, and he then complained that his feet had been cut off. He remained under my charge for about a year, and at the time I left the asylum the progressive paresis was pursuing its usual course.

CASE 2.—T. O. B., Celtic, æt. 41, was admitted to the New York City Asylum for the Insane, in 1877, with the following history: During the previous year (1876) he had been attacked by acute articular rheumatism, and in a delirium consequent on the fever he had attacked his sister and accused her of being in a plot against his life, refusing to eat or drink from her hands. He had hallucinations of hearing, and was at times extremely violent. The delusions and hallucinations already mentioned remained for two months, and then the patient's condition changed into one of stupor. Six weeks after, the patient became maniacal and depressed alternately. These symptoms all disappeared, leaving the patient, as his friends styled it, "cranky," but able to carry on his usual avocation. Six months thereafter he was treated at an

asylum in New Jersey, having what, from his sister's description, were evidently systematized delusions of persecution. In this asylum he remained three months, when his sister took him home, without apparent change, where he remained till a month prior to admission. On admission, the patient was found to have well-marked systematized delusions of persecution, somewhat weakened by the existing progressive paresis. His pupils were "pin-hole" contracted, but dilated unequally. There was some hesitancy in speech. The facial folds were unequal. The patient had marked insanity of manner and some ill-defined unsystematized delusions of grandeur. The patient's gait became impaired, and, having some convulsions which reduced him very much, he was taken out to die, by his sister, six months after admission.

CASE 3.—T. McG., æt. 45, Celtic, had been attacked by acute articular rheumatism early in the year 1875. The œdema of the joints suddenly disappeared, and he was almost immediately seized by a violent delirium, during which he claimed that his hands had been cut off, and that his food was poisoned, and that people were using instruments to burn the side of his body. He gradually passed from this delirium into a condition of melancholia attonita, from which he emerged, a month before admission, into a condition presenting marked insanity of manner with well-defined systematized delusions, together with well-defined hallucinations of hearing difficult to elicit. His delusions chiefly concerned his wife and her cousin, whom he accused of cutting his feet off and attempting to poison him. During six months these delusions continued exceedingly vivid, but at the expiration of that period the patient's manner became less disagreeably suspicious and he conversed with more freedom. His delusions of persecution were less well-defined, and the patient seemed, to my intense surprise, on the fair way to recovery. His pupils were, however, noticed to be unequal, and optimistic delusions began to make their appearance, followed by the other symptoms, mental and physical, of progressive paresis. He was soon after this removed to an Irish asylum, where a brother and sister were under treatment.

CASE 4.—J. G., æt. 28, American, was admitted to the New York City Asylum for the Insane with a history of having been attacked by rheumatism, during the fever of which he was seized by delirium, passing soon after into a condition of melancholia attonita, in which he remained three years. During 1874 it began to be noticed, first, that there was more intelligence about the patient's expression, then that he took food freely, and finally that

he conversed with the other patients. His facial folds were then noticed to be unequal; then his speech became hesitant, his tongue tremulous and his pupils unequal. On examination he was found to have delusions of an optimistic type. He finally developed into a well-marked case of paresis, dying early in March, 1875, of phthisis.

CASE 5.—J. D., Ger., æt. 50, was admitted to the N. Y. City Asylum in a violently excited condition. The patient's wife gave the following history: The patient's father and grandfather died during an epileptic attack, and the patient's eldest brother is an epileptic. The patient has been perfectly well up to three weeks before admission, when he was attacked by acute articular rheumatism. The swelling of the joints was at times extreme, but after a month's duration suddenly disappeared, to be followed by a change to the mental condition in which the patient was admitted. The patient continued excited and violent, the violence being rather of the nature of melancholic frenzy. There were marked hallucinations present of a very distressing character. The patient continued excited for about three weeks after admission, when he suddenly passed into a cataleptoid condition with great waxy flexibility. In this state he remained for three years, when his pupils became unequal, his tongue tremulous, and an expression of content pervaded his face. He did not, however, speak until about three months had elapsed, when he talked loudly about his wealth in Germany; his speech was hesitant, and he had a great tendency to omit words. He passed through the usual stages of progressive paresis, dying a year after the appearance of the paretic symptoms. No autopsy was obtainable.

CASE 6.—C. L., æt. 46, Ger., was attacked by acute articular rheumatism, which was followed by acute melancholic frenzy on the sudden disappearance of the joint affection, which gradually shaded into a state where well-marked systematized delusions of persecution with hallucinations predominated. This condition continued for a year and then passed into general paresis, in which state he was admitted to the asylum. He was there treated with conium, chloral hydrate, kali iod. and colchicum, and after six months' treatment was so far recovered as to be discharged to his usual avocation. When met with five years after his discharge, presented no evidence, mental or physical, of general paresis or other psychosis.

It is evident these cases have one thing in common, and that this, the peculiar systematized delusions of persecution which marked one stage of the disease. These delusions in their character strongly resemble those of the chronic type of alcoholic insanity, which I cannot agree with Spitzka[24] in regarding as unsystematized, since many of them are supported with as much detail as are those of any form of monomania. It is true there is a large class of chronic cases of alcoholic insanity which have decidedly unsystematized delusions of a character very similar, but the element of dementia is strong enough in those cases to prevent confusion with the other class. These cases corroborate Griesinger, Fleming and Kræpiliner to the extent of showing that rheumatism may give rise to chronic types of insanity, but in their earlier stages most resemble Skae's cases. In their conclusion they most agree with Jaccoud's and Voisin's opinions. At the same time, the infrequency of chorea and the strongly-marked systematized delusions of persecution give them characters not hitherto described as existing in insanity from rheumatism. From these cases I pass to the third class, cases in which rheumatism has exerted an apparently beneficial effect on already existing insanity.

CLASS THIRD.—*Cases in which rheumatism complicated other psychoses.*

CASE 1.—*Chronic mania with confusion.*

A patient was attacked by rheumatism while laboring under the form of disease above given, and during the rheumatic hyperpyrexia the patient became perfectly rational, resuming his old condition on recovery.

CASE 2.—*Hebephreniac dementia.*

A patient suffering under the above form of insanity was attacked with acute articular rheumatism with much swelling of the joints. The œdema of the joints suddenly disappeared, and a condition of high fever succeeded. During this the patient was

very quiet and subdued in manner, talked rationally, and was careful about his dress and person. This improvement was but temporary in character, the patient again becoming demented on recovery.

CASE 3.—*Melancholia attonita.*

A case of this affection was attacked by acute articular rheumatism followed by a fever, the temperature reaching 102°. The patient during this fever was decidedly rational, and after recovery from the rheumatism fully recovered from his melancholia attonita.

CASE 4.—*Epileptic dementia.*

P. O'F. was attacked by epilepsy at the age of ten, and had been in the asylum as a case of epileptic dementia for ten years. He was attacked by rheumatism, during the fever of which the patient was rational but rather juvenile in ideas, but soon after recovery resumed his usual dementia.

CASE 5.—*Monomania.*

G. J. A case of this disease was attacked by rheumatism, during the progress of which his delusive ideas entirely disappeared, but again resumed their sway on the patient's recovery from rheumatism.

CASE 6.—*Querulent melancholia.*

R. J. F. A case of this kind was attacked by rheumatism, during the prevalence of which he became very optimistic in ideas. The optimism continued after recovery, the patient finally becoming a case of progressive paresis.

The percentage of cases in which rheumatism has affected the mental condition of patients is, in my experience, about equal to that of Kræpiliner, five per cent. Simon and Kelp have, however, found a much lower percentage.

From these cases it seems to me the following conclusions follow:

First.—That rheumatism produces certain psychical changes.

Second.—That these changes are either of an acute or temporary kind, or else of a chronic type.

Third.—That the chronic type passes through three stages: a stage of melancholia, either of the atonic variety or with unsystematized delusions; this condition is fol-

owed by one in which the delusions are decidedly of a systematized type, to which succeeds a mental state closely resembling general paresis.

Fourth.—That rheumatism often produces apparent improvement in the chronic psychoses complicated by it, which is usually but temporary in character.

Fifth.—That the acute form has usually a good prognosis as regards recovery, but is much more fatal than the chronic form.

Sixth.—That the chronic form has a bad prognosis as regards ultimate recovery.

Seventh.—That heredity here, as in other psychoses, plays an important part as a predisposing cause.

Eighth.—That intercurrent cardiac affections apparently exercise some influence on the nature of the delusions.

V.—THE PSYCHOSES PRODUCED BY HEAT.

The literature of this subject is exceedingly scanty. Baillarger,[25] Voisin,[26] Griesinger,[27] Ellis,[28] Bucknill and Tuke,[29] and Moreau,[30] are all that have made even brief references to it. David Skae includes this variety under his "Traumatic Insanity," concerning which he quotes and endorses the following conclusions from Francis Skae:

"First.—Traumatic insanity is generally characterized at the commencement by maniacal excitement, varying in intensity and character.

"Second.—The excitement is succeeded by a chronic condition, often lasting many years, when the patient is *irritable*, *suspicious*, and *dangerous* to others.

"Third.—In many such cases distinct homicidal impulses exist.

"Fourth.—The characteristic delusions of this form of insanity are those of *pride*, *self-esteem* and suspicion, melancholia being but rarely present.

"Fifth.—This form is rarely recovered from, and has tendency to pass into dementia and terminate fatally by brain disease.

"Sixth.—That the symptoms, progress and termination of this insanity are distinctive and characteristic to enable it to be considered as a distinct type of disease."

I have seen, in all, ten cases due to heat, of which five were directly due to insolation.

The cases are as follows:

CASE 1.—D. McC, æt. 39, Irish, fireman, was sunstruck during 1872, this being followed by an acute attack of meningitis; when the acute symptoms of which had passed away, the patient was very dignified and haughty, and was exceedingly suspicious of his fellow-workmen, whose familiarity he resented. An attempt on the life of one of them led to his incarceration in the asylum, where he was regarded as a case of intellectual chronic mania with systematized depressing delusions. During 1874, the patient's insanity of manner, which had hitherto been well marked, began to disappear, and he manifested optimistic, unsystematized delusions of a rather stupid type. He claimed to be the chief fireman of the world, with a salary of $15,000,000 per annum. His pupils were unequal, his enunciation was impaired, and his tongue was tremulous. He had a series of convulsions, which were checked by ergot, but being seized by pneumonia, died during 1875. The brain showed marked meningitis of the convexity, on the autopsy, but decayed while undergoing hardening.

CASE 2.—P. C., æt. 40, clergyman, unmarried, was sunstruck during the summer of 1873, but by the fall of that year had apparently recovered, though he became irritable, and finally had to be deposed from the priesthood because of the existence of delusions of persecution and hallucinations of vision. His condition at this time was, according to a medical observer, that of a case of chronic intellectual mania with marked insanity of manner and depressing delusions, mingled with which were ideas of his own superior ability. During the year 1874 he began to have some hesitancy in speech, and pilfered articles of trifling value. At length he became markedly indecent, and transfer to the asylum was rendered necessary. On admission, the patient had marked insanity of manner, with some faint delusions of persecution,

but his general mental condition was that of a paretic, he having stupid, unsystematized delusions that he was Pope and at the same time President of the United States. His pupils were unequal, his lips tremulous, there was a slight hesitancy in speech and inequality of the facial folds. During the fall of 1874 he had several convulsions, which were treated by ergot with apparently beneficial results as regards his mental condition, although his extreme uncleanliness still persisted. The patient is still alive, and varies only from the average paretic in being a masturbator, a peculiarity common to all insane theologians.

CASE 3.—Jno. P., æt. 43, American, clerk, was admitted to New York City Asylum for the Insane during 1873 with the history of having been sunstruck three months before, on recovery from which the patient was found to be exceedingly suspicious, timid and irritable. He at this time had hallucinations of taste, claiming that he could detect arsenic in his food. On admission to the asylum he had marked delusions of persecution and hallucinations of taste, hearing and sight. During 1874 the hallucinations of taste and sight disappeared, together with the insanity of manner, the other hallucinations being very illy defined. He became slightly hesitant in speech, and his pupils responded unequally to light. In October, 1874, he had a convulsion, after which he claimed to be worth millions of dollars; his face became soggy, and his gait was somewhat impaired. In the course of the next two weeks he had another convulsion, and was placed under ergot, resulting in a temporary improvement in his mental condition. He died during 1877, four years after the beginning of the disease, from an intercurrent lung disease.

CASE 4.—Jos. T., æt. 42, American, was sunstruck during the year 1872, which was followed by meningitis; after the acute symptoms of which had disappeared, the patient was found to require asylum custody because of his marked delusions of persecution, his suspicions and violent disposition. He remained in this condition of excitement during 1872 and 1873, and sank into a condition of dementia during 1874, from which he emerged in 1876 with all the symptoms of general paresis, dying during that year from a convulsion.

CASE 5.—Michael F., Irish, æt. 41. Patient was a cook, and during the summer of 1873 had incautiously exposed himself to the sun in the yard of his place of employment, after which he felt a little dizzy, but continued to work before a warm range for an hour, when he suddenly fell down. This was followed by an

attack of acute meningitis, the acute symptoms of which having subsided, the patient was found to be suffering from delusions of persecution. The family retained him at home for four months, during which he displayed great irritability, complained of copper being in his food, accused his wife of being in a conspiracy against him, and conducted himself in a violent manner, and was extremely dignified. He was taken to the country, but new symptoms of insanity manifesting themselves there, he was again removed to the city, finally reaching the asylum in 1874. The patient was then a typical case of general paresis. He had several convulsions during 1874, which were treated by ergot with beneficial effect. He died early in 1875 from phthisis.

CASE 6.—Jno. G., fireman, Scotch, æt. 39, employed on a river steamer, was seized by a fainting spell during a hot summer, followed by an acutely maniacal condition ; on recovery from which the patient was found to have systematized delusions of persecution, which remained for three years and finally disappeared to give way to general paresis, from which the patient died three years after. The other four cases have already been cited elsewhere, for which reason there is but little necessity of quoting them here.

These cases do not display any marked evidence of heredity; they all have evidently occurred in people of middle age, and from them it seems to me that we may conclude: First, that heat, without the predisposing element of heredity, is capable of giving rise to psychoses; second, that Francis Skae's opinions are to a certain extent corroborated by them, but that for his term, brain disease, must be substituted general paresis.

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